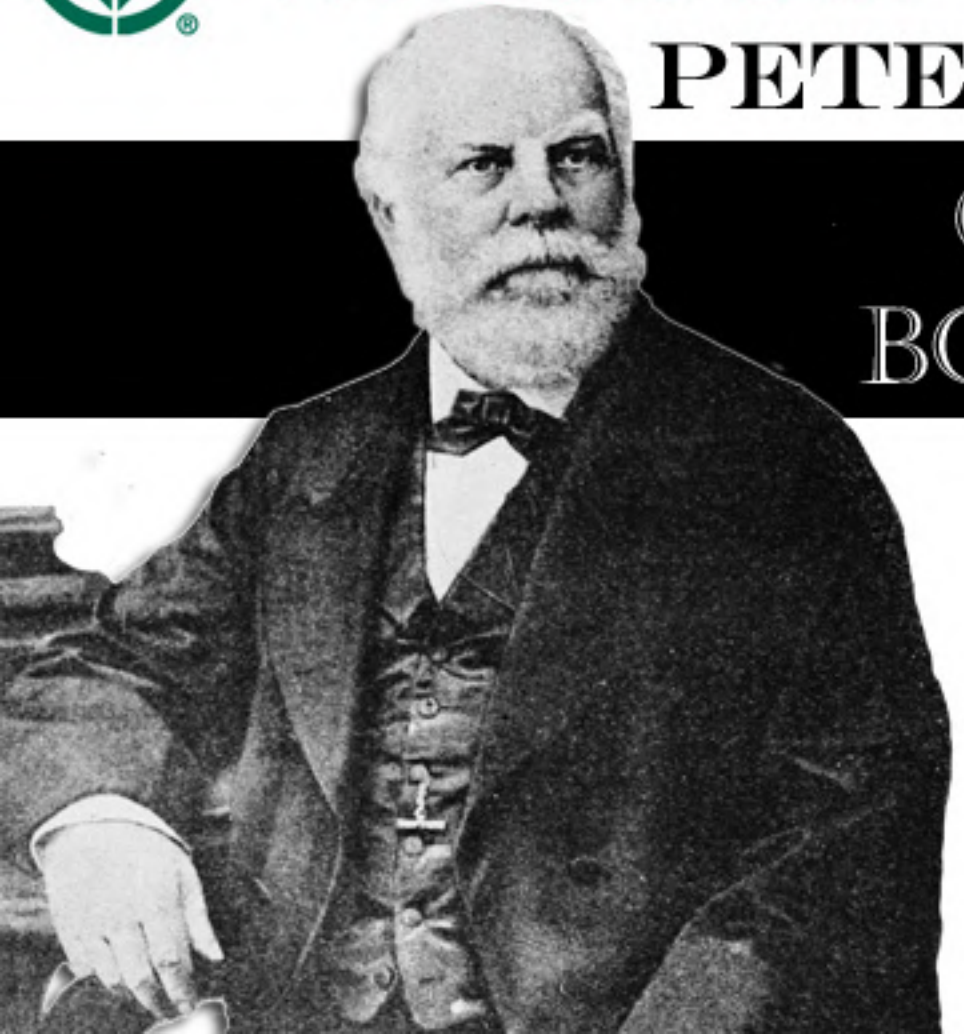
Missouri Botanical Garden

Peter H. Raven Library

George Engelmann Botanical Notebooks



Pagination Note:
Since many of the items lack a specific page number, the page number displayed online refers to the sequentially created number each item was given upon cataloging the materials.

~~Kew Herb Dupl~~

Echinocactus denudatus at A Haseloff / Berlin
June 10 1868 flower 6 inches long & several buds.
The following belong, according to De Candolle's statement
to the same group of Gymnocalycium:

subtetral C. denudatus white, slightly white flow

C. hyptiacanthus

C. multiflorus

subtetral C gibbosus subtetral

C. reductus white, slightly white

C leucodictyus

C. ferox.

also probably
C. riambarinus Grisebach Hook
subtetral C Monvillei White or pale rose slightly white
" C Gayanus
C Netrelianus
subtetral C hexacdrophorus " "
C hyptiacanthus
C multiflorus Hook
C. eberacanthus Mons.
C hybogonus

1556

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Hort Schaefer, Münster

Münster, Schaefer, June 1857

Echinocactus Monvillii a beautiful and very distinct species, with oblong short but very distinct spiral ~~areolae~~ tubercles, and elongated, lanceolate areolae; flowers in Münster (at Schaefer's) as well as at Jarolin's in Cologne not in the axills of the just developping areolae, but in those of last summer, or fall, which however do not seem to have been fully formed; as the uppermost spines exhibit old points (of last year) but very base, fresh ones, from this spring's growth,

[Same as C. denudatus (1860 & 1864)]

Do the new areolae of this spring produce flowers later in the season? or are all flowers from such older areolae?

Do these plants grow in the same way in their native country?

Flowers 2 or 2½ inches distant from the centre of the plant.

Flowertube 2½ inch long, whitish or pale rose 3-4 scales on ovary, naked, 15-18 sepals in all and about 18 petals; stigmata 11-12, whitish rather stout.

1857

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Echinocrantes tenuispina large yellow flowers
ovary & tube covered with equals in the axilla of
thick brown wool & bristles. (Hort Jacobi)

E. hystricacantha ovary & tube covered with
uniform scales, without any axillary bristles &c.
(H. Jacobi)

C. electracantha small flowers, ovary & tube
with short scaly sepals. (Hort Schaefer)

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

Echinocactus gibbosus (at ~~Guadaupe~~ Ysordeff) April 2 1869

similar to E. Gayanus, tubercles less prominent

Tubercles represent the bases or pulvini of leaves?

flowers from the inner edge of last years growth, where the ~~tubercles~~ spines are not yet quite fully developed and ~~are~~ become more elongated, their bases soft & brighter coloured

Inside of this circle of flower buds are numerous

Hort Guadaupe 5/4 69 flowerbuds of E. gibbosus from old areolae, which, however, make a few near spikes on their upper edge or push them out farther, (base looks soft and fresh) when already formed.

1558

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

1559

Echinocactus denudatus is usually shit
but is also found with rose coloured flowers
(Gardeney, Arbor) and even with Orange (Arbor

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Prag July 10th at Hanke's
1869

Ech. Monvillii with abt 13 ribs, but almost blind
into mamillae — areolae lanceolate

8 Spines

1560

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Kew Sept 1869

C. simulans Hook. Bot Mag 4326

Fl. 8ᵒ Dia. 3 & 7-Cleft Pl. depressed, 15ᵒ. Diam
Perianal tubercles immersed - is rather a Corona
or Calyx to the Gynandrosium rays
ovary & Tube with triangular ovate sepals
bearing some dark hair in axils - pale
green, stigma yellowish.

1561

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

Cactus gibbosus Haw syn (1812) p. 173

Botan Register tab 637

Echinocactus gibbosus DC. Prod III. p. 461 Lem Le. V. T. 1

Salm (1850) p. 348 & 171. Foerster p. 290

Labourd p. 251

Cereus gibbosus Pfeiffer Cact (1837) 74. Wlp. Rep. II. 325

Gymnocalycium gibbosum Pfeiff Abb. II. t. 1. note (1846)

huc Cactus nobilis Haw syn (1812) p. 174. = Cer. reductus DC

fide Salm p. 171 fide DC Prod 3. 464

Cactus reductus Link enum hagn II. 21 (1822)

Cereus reductus DC Prod III. 463 Pfeiff Cact 75

Wlp Rep. II. 325

Gymnocalycium reductum Pfeiff Abb. II. t. 12 (1846)

Inter Salm unites gibbosus & reductus DC. Prod ker them in different genera; Pfeiffer unites them with denudatus as 3 species of his Gymnocalycium & a good subgenus of Cereus - uniting Cereus with Echinocactus, but more nearly allied to Cereus.

It is probable that all or most white flowering Echinocacti which Labouret pg 248-257 (nos 95-103) comprises under Gymnocalycium sub Sect of Echinocactus do belong together here: pg. 239 B. Hybogoni à côtes formées de bosses (enchuphy ! s.c.!) pg 246 ** Eurycephali ? 2 bosses large pg 248: 2. tube écailleux, nu (Gymnocalycium Pfeiff)

Labouret p. 248. N 95 Echinocactus Netreliannus Mouv. flowers large, "satinés" tube operculate, formed of scales, upper ones dilt or lacerate

p. 248. no 96. E. hypticacanthus Lem "flowers white, tube scaly as in E. Mouvillei and the allied ones

p. 250 no 97. E. hexaëdrophorus Lem (includg E. fossulatus Scheidw)

Through spring and summer almost all new areolae bring forth flowers silver white, often with rose coloured line in the centre; style short, with 9-10 white stigmata

[The appearance of the flowers on the young areolae, indicates it to be an Echinocereus!]

p. 251. nn. 98. E. gibbosus DC. (probably E. reductus)

252. nn. 99. E. ebenacanthus Mons. (E. fuscus Muhlenpf) & Salm p. 170 flowering in June, July & August; flower white, petals at base pale buckwheat very similar to last species, to which it is closely allied

254. nn 100. E. Multiflorus Hook fl. May June & July abundant, flowers large white similar to those of gibbosus.

255. nn 101 E. Mowillii Lem fl. May - July, brilliant white four short rounded scales on tube; 10-11 stout stigmata.

256. nn 102. E. Hybogonus Scheer fl. - June - July; flowers white or rose - style short with 14 yellow stigmata; plants rose

257. nn 103 E. denudatus Link & Otto

also multiflorus

Some of these (especially E. hexaedrophorus) are to me doubtful species of Pycnacanthus, on account of their flowering from the young areolae. - Or are only the first flowers of all these from the latest areolae of last year, and all the later flowers from the areolae of same year?

Probably the first one (E. Metzleianus), with lacerate sepals, does not belong here. June 1864

June 5 1865 (Cereus reductus) Same plant with a single flower, abot ~~20 lines long~~ 2 inches long and 1 3/4 - diameter - 10 erect stigmata. - Sepals on ovary 12, 9 on ovary itself, 3 on margin, in 3/7 arrangement; ~~4~~ spirals of 3 sepals each, are next exposed 3 shallower or flatter spirals, of 4 sepals each - 7 vertical ribs

"Echinocactus reductus" sem. ex hort Ct Jacoby 1857.

Mr Greaves raised it 1859, and after pretty hard usage, I have now (June 1864) two plants, one 1½ inch diameter with 10 ribs and another one 2 inches diameter and 1½ inches high, with 9 ribs — flowering for the first time June 10th 1864

flower distinctly from the youngest last old areolae of last year!

and in that respect a Cereus! but Labouret pag 252 says: les fleurs sont rodores [I found them so, but Pfeiffer &c. calls them odorous] 7–9 cent [3 inches] longues, elles sortent abondamment pendant l'été du sommet de la plante, s'ouvrent le matin pour se refermer le soir etc. — —

If they come out throughout the season, it is probable that only the first ones come from the axils of the old bunches of spines, and the later ones from those of the new ones, of the same year!

ovary ovate — cylindrical 7 l. long,

ovules about ¼ line long, short & broad, or branched funiculi, usually 4–6 together

naked space at base of obconic or rather

tri-cuneate-shaped tube ¾ line long, rose-coloured;

adnate on part of the

Stamens 5½ to 6 lines long; inner ones very

short, outer ones longer, at last curved over the

style, which is not as long as they are; filaments 3–4 & 5

lines long — anthers very pale yellow, 1 line long

smooth, triangular-globose

Pollen (not well developed, anthers not opening!) best granules 0.023–0.025 l. diam.

Style stout 9 l. long; 6‴ style proper, 3‴ erect

adpressed stigmata, obtuse, 9 in number

Ovary & tube glaucous greenish; ovary with 8

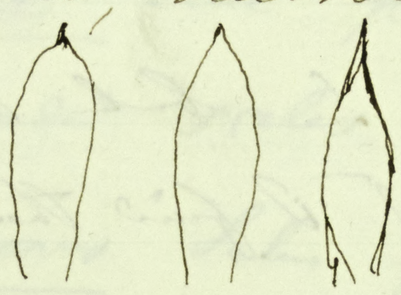
scales, [illegible] ones triangular acute, very short, without

4684-9 in Mex

1562

any axillary production.

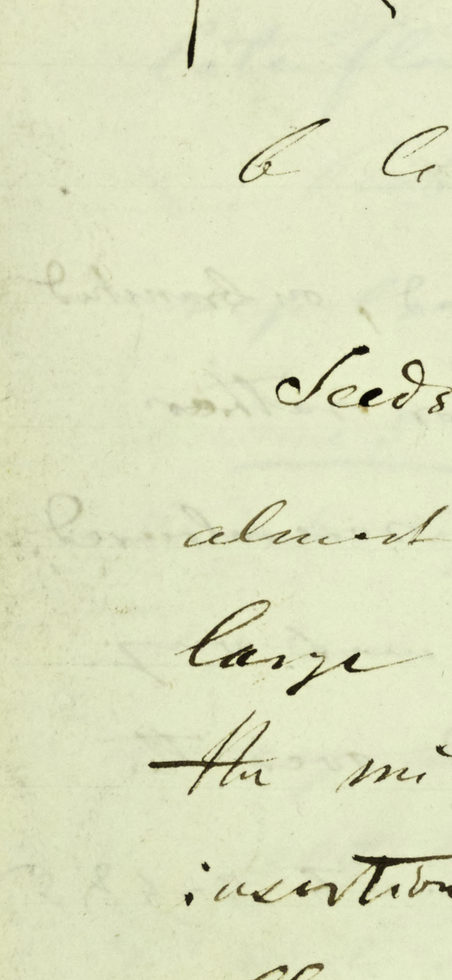
Sepals of tube 2½; lowr ones broadly suborbicular
obtuse, mid one ovate obtuse, upp most
oblong spatulate, obtuse slightly micronate with
Petals 18–21 white, oblanceolate, obtuse ½, micronate
Grnd white margin
inner ones shorter, narrower, oblanceolate acute & even
acuminate.



Petals twice as long as style &
stamens.

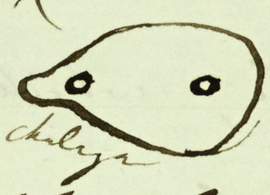
MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

2 Plants with 9 & 10 nbr depressed —
spikes straightish, always 7, radially, 2 upper ones
shortest, 3 lowr long, 3 lowest longest, 6–7 l. long
Areolae orbicular, when young, & with
short white tomentum — at last oval
& naked; areolae in these yng spines only
6 lines distant apart



5/8 l. diameter in height

Seeds black, opaque, minutely (under a lens) tuberculate,
almost globose, truncate at base, not carinate,
large hilum basilar, rounded behind (where
the micropyle), narrowed forward (where the chalaza
insertion of vessels & funiculus)



albumen indicated only by brown thickening of
the secundine, opposite the Chalaza;
Embryo about ½ the lgth, straight, with short
cotyledons very distinctly transverse or oblique
(8 or 10 seeds examined).
Flower opens for 3 (or 2) days every forenoon and
closing again in afternoon

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Cereus reductus
call by me St Louis June 12 1864

1563

0.025

0.022

Pollen x 415
from unopened anther

incomplete

ovules 4 or 6
together

x10

proper position
of embryo

Embryo

micropyle

x8

trunc of albumen as brown
thickened skin
no albumen proper

0.023

x10

stamen
not well
developed

x60

chalaza

micro
pyle

top of Embryo
showing the contorted
or oblique Cotyled.

fruit greenish

Surface of ovule x60

ALEX. LEITCH,

APOTHECARY AND CHEMIST,

Marble Building, Cor. Fourth and Olive Streets,

ST. LOUIS, MO.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

"

Echinocactus reductus Hort Lasoby

Cactus 10th June 1857

Small globose plant, 3" diam. —

6-8 stout brown, curved radial and 1 similar central spine, all 1 inch long

1564

Flowers white, central — large,

3 inches long; with very few scales or tube and ovary.

"

"C. reductus Link from Mexico", Hort Kew, Aug 1857

1 foot high - tubercles prominent below the areolae, on the vertex these tubercles are very prominent before the spines on the areolae are formed.

(areolae 1/4 inch diam)

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

JONES & LEITCH, DRUGGISTS

COR. FIFTH & MARKET STREETS,

ST. LOUIS, MO.

J. McKittrick & Co. Cor Main & Vine.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

470-2

Echinocactus denudatus Link & Otto Icon. pl. rar. H. Berol

pag 17 tab 9. (1828) Salm p. 34 Labouret p 257

Cereus denudatus Hort Berol fide Pfeiff. Enum p 73

Gymnocalycium denudatum Pfeiff. Gt Schulthess 1843

Pfeiff. Cact. II tab 1 note (1846)

1565

Ribs in the small plants — Gobel's garden 5 — 6 —

flowers from the axils of bunches of spines, which were partly formed last year, and of which the innermost 2 spines have only come out this spring! therefore from the last (rather incompletely formed) areolae of last year! Same May 1865

June 14th 1864 Flower white 2 inches long 1 1/2 — diam. external petals recurved when fully open. — Opening for 2 or three days — forenoon, closing again — afternoon.

Sepals 20 or 30 3 transverse, obtuse

Sepals of rather short tube about 16 or 17 — in the small flowered specimen, — 4/7 arrangement, lower ones transverse, obtuse, upper most ones acute & accumulate

Petals white about 23 oblanceolate, acute and the uppermost ones much narrower & shorter acuminate,

Tube at naked (base) rose coloured, 1/2 line, base of lowest stamens also rose coloured

Staminate part of tube about 6 lines long, turbinate,

Style 10 1/2 lines long, including the 8 erect white stigmata of 2 l. length — as long as the outer, recurved stigmata Stamens

Like Ech. Ottonis it multiplies by subterranean buds or stolons!

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

20 lines diameter

June 5th 1865 same plant again with a single flower — Identical to that of last year. Stigmata erect, 10 in number.

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

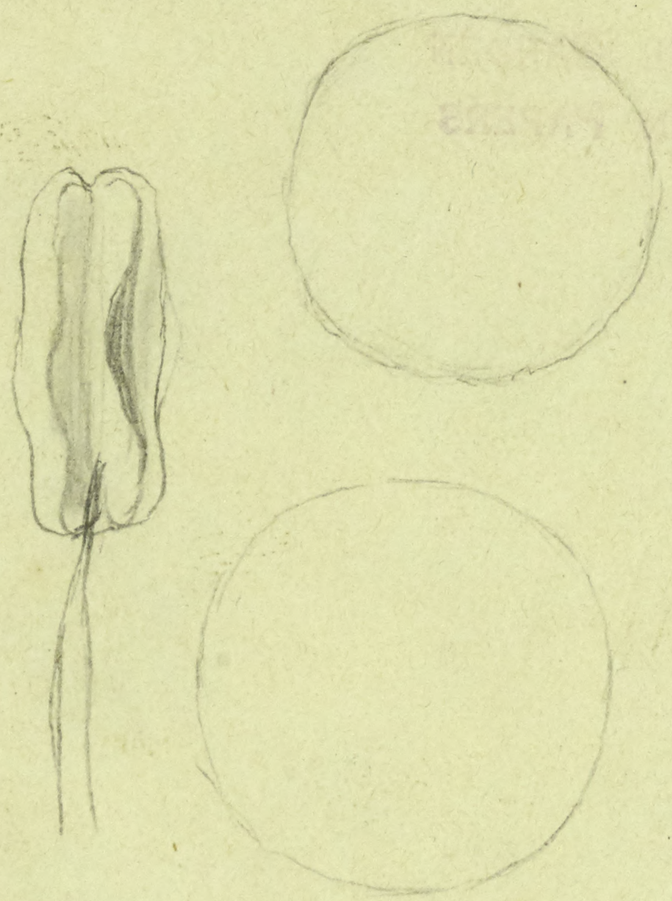
0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN

Cereus donudatus

Hort Gorbel St Louis Jun 14 1864

× 10

ovules 2 or 3 together
or single.



× 10

× 60

Pollen $\frac{10\frac{1}{2} - 11\frac{1}{2}}{515}$ lin

= 0.025 – 0.028 lin

HOTEL TELLICH
St Louis
Chemical Laboratory & Chemists
1566

MISSOURI BOTANICAL GARDEN
GEORGE ENGELMANN PAPERS

0 1 2 3 4 5 6 7 8 9 10
cm
copyright reserved
MISSOURI BOTANICAL GARDEN